

# Genetic Resources and Seed Enterprises

Management and Policies

HARI HAR RAM & RAKESH YADAVA



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# **GENETIC RESOURCES AND SEED ENTERPRISES**

Management and Policies

Part - 1

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## Preface

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Plant genetic resources (PGR) have a unique place within the overall ambit of biodiversity – and are of great value in providing food, fuel, clothing, medicine and shelter for the whole mankind. The significance of plant germplasm resources dates back to mid eighteenth century, when Sir Joseph Banks, the Director of Kew Botanical Gardens, England, accompanied Captain Cook on a plant collecting voyage. Plant genetic resources are, however, increasingly being threatened due to degradation of their habitats, changes in ecology, cropping systems, modernization of agriculture, rapid replacement of locally adapted indigenous cultivars by modern high yielding varieties and effect of urbanization. Plant genetic resources are going to be the back bone of plant breeding and seed industry enterprises which are occupying now the centre stage in India. The success of seed industries in term of upgrading their products will greatly depend on the sustainable management of the plant germplasm. The scientific management of plant germplasm cannot be in isolation, any more. It has to be interwoven in the R and D programme of any successful plant breeding and seed production enterprise. These days, a lot of international agreements and national legislations on plant germplasm management and plant variety protection have been put in place and working knowledge of the same is essential for plant breeders, plant germplasm managers and seed industry personnel. The use of transgenics/GMOs has generated a lot of heat world-over. Regulatory procedures on their commercial release and management have been adopted and are under constant review and modifications. Almost all the CGIAR funded international agricultural research centres, have independent units/ divisions on plant genetic resources management. IPGRI is coordinating and strengthening the PGR management programmes at the international level. National Bureau of Plant Genetic Resources, New Delhi is the nodal organization in India on PGR management. Crop based ICAR institutes are giving greater importance to PGR management. Even state agricultural universities are now initiating concerted efforts to strengthen teaching and research activities on PGR management. Indian Agricultural Research Institute, New Delhi has already started awarding Master level degree in PGR management. State Agricultural Universities and other organizations are giving greater coverage to this subject including seed technology, transgenics and intellectual property rights. Therefore, an attempt has been made in this book to put all these issues at

one place in a simple and understandable manner without compromising on the core of the complex matter.

This exercise would not have been possible without the active support and opportunity provided by Dr. P. L. Gautam, Vice-Chancellor, GBPUAT and Dr. S. B. Singh, ex-Vice-Chancellor, GBPUAT and presently Vice-Chancellor, Dr. Ram Manohar Lohia Awadh University, Faizabad. We express our gratitude to them. Behind the scene players in this endeavour were Miss Gunjan Sharma, JRF and Dr. Kavita Sharma, SRF. They deserve our gratefulness and appreciations. We would like to single out Miss Gunjan Sharma who has just been superb in providing necessary assistance in this matter. She has put in genuinely sincere and exemplary efforts. It is just a privilege to thank her for ever. I profusely thank the entire staff of New India Publishing Agency for their promptness, support and co-operation.

November 13, 2006

**Hari Har Ram  
Rakesh Yadava**

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The Book entitled “Genetic Resources and Seed Enterprises: Management and Policies” addresses the three core issues vital to modern crop improvement. The first part is related to collection, characterization, conservation and evaluation of plant genetic resources with focus on biotechnology interventions. The second part analyses in depth the principles of seed technology along with focus on seed industry which is expanding fast under private sector. The third part deals with international agreements and national legislations related to biodiversity conservation, seed policies and intellectual property rights. The book shall be very handy to undergraduates and post graduate students across a wide spectrum of disciplines in agricultural universities and professionals dealing with plant genetic resources, seed and policy framework.

## Related Publications

- ❑ Agricultural Biotechnology : *G.J. Persley*
- ❑ Breeding of Horticultural Crops : Principal and Practices : *N. Kumar*
- ❑ Flower Crops : Cultivation and Management : *A.K. Singh*
- ❑ Horticulture Science Series : *Series Editor - K. V. Peter*
  - Aromatic Plants: *Baby P. Skaria* Medicinal Plants: *Kurian Alice and M. Asha Sankar*
  - Fruit Crops: *Radha T. and L. Mathew* Vegetable Crops: *T.R. Gopalakrishnan* Spices: *Nybe E.V., N. Mini Raj and K.V. Peter*
  - Propagation of Horticultural Crops: *Rajan S. and Baby Lizzy Markose* Post Harvest Technology of Horticultural Crops: *Sudheer K.P. and V. Indira*
  - Management of Horticultural Crops: *Kumar Pradeep, T.R. Gopalakrishnan and N. Kumar*
  - Flowering Trees: *P.K. Valsala Kumari* Flowers for Trade: *M.N. Sheela*
  - Ornamental Flowers: *Rajeevan, P.K.* Plantation Crops: *Kurian Alice and K.V. Peter* Tuber Crops: *MS Palaniswamy*
  - Coastal Horticulture: *Kanthaswamy, V.* Basics of Horticulture: *K.V. Peter.*
- ❑ Heterosis Breeding in Vegetable Crops : *N. Rai & M. Rai*
- ❑ Recent Trends in Horticultural Biotechnology : *R. Keshavachandran*
- ❑ Temperate Horticulture : Current Scenario : *D.K. Kishore*

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